Modified Canny Edge Detection Algorithm Outline

1. Apply Gaussian blur filter:
    1.1. Convolve raw RGB image with a symmetric Gaussian kernel, for each color.
    1.2. Reduces high-spatial-frequency noise.

2. Estimate gradients with Sobel operators:
    2.1. Convolve image with horizontal and vertical Sobel kernels, for each color.
    2.2. Calculate L1-norm of horizontal and vertical gradients, for each color.
    2.3. Take maximum gradient value over all colors, for each pixel.

3. Perform horizontal non-maximal suppression:
    3.1. Keep only locally-maximum gradient values over a specified horizontal range.
    3.2. Effectively thins vertical edges and disperses horizontal edges.

4. Determine long vertical edges.
    4.1. Use hysteresis thresholding to “connect” vertical edges.
    4.2. Only keep edges that are longer than some minimum length.
    4.3. Approximate each edge with 3 vertices.